ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

May 13, 1958
Vol. 19...No. 7

Dear Sir:

Bids returnable in four weeks for $1.6 million in new construction at the National Reactor Testing Station, Idaho Falls, Idaho have been asked by the USAEC's Idaho operations office, Idaho Falls. The work, under invitation AT(10-1)-938, is in connection with the Experimental Breeder Reactor II project, and will be construction of a laboratory and service building, utilities, and service facilities. ..... Contract to design and furnish long lead time reactor compartment components for five nuclear powered submarines has been awarded Westinghouse Electric Corp., by the Navy's Bureau of Ships. Of the cost-plus, fixed fee type, the contract totaled $17,905,000. The material to be supplied (for the Navy's fiscal-1959 shipbuilding program) includes such items as reactor vessels, control rod drive mechanisms, main cooling systems together with their generators and pumps and main loop piping, etc. ..... Bids returnable by June 12 have been asked by USAEC's Hanford operations office, Richland, Wash., for construction of high level radiochemistry facility at Hanford Works. (Other CONTRACT NEWS, p 5 this LETTER.)

Grant of $500,000 has been made by the Rockefeller Foundation to assist a new program of teaching and research in the industrial and public health aspects of ionizing radiation. The program is being conducted jointly by New York University-Bellevue Medical Center and the USAEC's health and safety laboratory, in New York.

Grants of $350,000 each by the U. S. Government have been approved by the USAEC toward costs of nuclear reactors which Sweden and Israel are buying in the U.S. The Swedish reactor, for research and materials testing, will be a 30,000 kw (heat) heterogeneous type. ACF Industries, Inc., will design and manufacture it for Aktiebolaget Atomenergi, company jointly owned by the Swedish government and private industry. Total cost is estimated at $4,294,995 with the ACF reactor costing $1,850,000; balance is for the building and associated facilities. The Israeli reactor, a 1-megawatt heterogeneous pool-type unit, will be manufactured, assembled and installed by AMF Atomics, subsidiary of American Machine & Foundry, New York. It will be the primary facility at the Israeli Atomic Energy Commission nuclear center, near Rehovoth, Israel, which will also include a radio-chemical laboratory, physics and electronic laboratories, machine shops, etc. Cost of the nuclear and associated facilities is estimated at some $1,410,000. (Other BUSINESS NEWS, p. 2 this LETTER.)

Lisbon Uranium Co., of Salt Lake City, Utah, last fortnight became first company to qualify for the USAEC's $10,000 bonus offer for discovery, production and delivery of not less than 20-tons of uranium ore containing 20% or more uranium oxide. Lisbon made delivery April 9th; the USAEC offer had been made April 11, 1948 and ran for 10-years. The Lisbon ore, of a uraninite-pitchblende type, assayed 22.92% uranium oxide and with a gross weight of 22.25 tons contained 10,200-lbs. of uranium oxide. The bonus was over and above the ore purchase, which came to $51,016. Lisbon stated that the ore had come from its properties in the Big Indian Wash, near Moab, Utah. (Other PRODUCT, MATERIAL NEWS, p. 3 this LETTER.)

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ATOMIC ENERGY FINANCIAL NEWS...

INSTRUMENT FIRM EXPECTS SALES GAIN:- Sales of Victoreen Instrument Co. will be about $2,300,000 for the first six months of this year, compared with $1,680,000 for the like 1957 period, according to D. H. Cogan, company president. Net for the 1958 six months will be only about half of what the firm earned in the 1957 period ($219,486 or 36¢ a share for 1957 first half); this is result of loss-carry-forward the company then had. Victoreen, pioneer manufacturer of radiation measuring instruments, now has backlog of unfilled orders of about $3,500,000 up from $2,900,000 at the end of 1957, Mr. Cogan stated. No cash dividends will be paid in 1958 or 1959, Mr. Cogan said, because the company wants to conserve its cash for expansion purposes. However, he noted it does plan to pay a stock dividend this year.

DIVERSIFIED NUCLEAR FIRM HAS GOOD QUARTER:- Revenues for the first quarter of 1958 for Vitro Corp. of America were higher than for the first quarter of 1957, J. Carlton Ward, Jr., president, told stockholders at the annual meeting in New York. Although the gross was best of any previous first quarter, net income was lower, reflecting losses of Vitro Rare Metals Co., a division. Because of the depressed condition of the metal market, and current drop in mineral and metal prices, Vitro Rare Metals has suspended production at its Canonsburg, Pa., refinery and processing plant, although experimental and development programs are continuing. The 40% owned Heavy Minerals Co. also plans to suspend mining operations in its South Carolina mineral holdings because of the depressed world market for titanium, zirconium and associated metals. (Vitro Corp., with uranium mining and milling operations; nuclear engineering activities; uranium refining; etc., has broad interests in the atomic field in addition to its other engineering and aircraft activities.)

ENGINEERING FIRM EXPECTS DROP IN SIX MONTHS NET:- Net income of Fluor Corp., Ltd., for the six months ended April 30, 1958 will be down about 30% from the $1,133,400 the company earned in the first half of its fiscal 1957 year, according to J. S. Fluor, president. The company billed $30.6 million in its first quarter of fiscal 1958, compared with $35.3 million for the like period a year earlier. For the first half of 1958 the company will report billings probably between $55 million and $60 million, as compared with the $75.6 million of the first half of fiscal 1957, Mr. Fluor noted. (Fluor's engineering and construction division, which accounts for approximately 70% of the firm's sales, has worked on processing of nuclear wastes, and other nuclear engineering and chemical plant activities. Its research division, set up in 1941 at Whittier, Calif., is currently developing and testing various nuclear materials for use as fluidized fuel in a new type of nuclear reactor. It also has a $25,000 contract from the Department of the Interior for recovering fresh water from sea water using nuclear energy in combination with various other processes.

ATOMIC ENERGY BUSINESS NEWS...

PLANT EXPANSION PLANNED:- Increased demand for the company's original line of uranium products has prompted current expansion by Mallinckrodt Chemical Works of its commercial uranium plant at Hematite, Mo. Plans call for doubling the floor space of the original enriched uranium processing plant, and installation of additional facilities. Completed so far is plant for production of uranium metal; solvent extraction unit for scrap recovery will shortly go on stream. If market conditions warrant, company plans to add a pellet manufacturing unit; it is now operating a pilot-size pellet line, mainly to test the pelleting characteristics of its own production of uranium oxide (brown oxide).

PLANS SUSPENDED FOR LATIN AMERICAN NUCLEAR POWER PLANTS:- Plans of American & Foreign Power Co., New York, for construction of nuclear power plants in Mexico, Brazil, Cuba, and other Latin American countries have been suspended "until nuclear power becomes more nearly competitive with conventional power", and until "other obstacles have been overcome" the company has now stated through H. W. Balgooyen, vice-president. Mr. Balgooyen emphasized that this was a suspension of the company's program, and not its complete abandonment.

LICENSES ISSUED:- Permit and license is being issued by the USAEC to North American Aviation, Inc., for construction and operation of a 10 (thermal) watt nuclear reactor (model L-77) at the company's Atomics International division plant, Canoga Park, Calif. The company intends eventually to sell such reactors for research and educational use.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Model 6510 hand and foot monitor is for continuous use for measurement of alpha-beta-gamma contamination of hands and feet. Four scaling channels supply information in counts per minute on each sole and from the back and front of each hand. Counting starts when pressure is exerted on the back panel of the left hand cavity. Halogen quenched thin mica counter tubes of this manufacturer's production are used as the detectors. --Anton Electronics Laboratories, Inc., 1226-38 Flushing Ave., Brooklyn 37, N.Y.

Model 762 scaler, for high speed counting of pulses from nuclear instruments, consists of an input pulse height discriminator, a fast scale of 10, three slow-speed counter decades, and a six-digit electromechanical register. The fast scale uses a Burroughs beam switching tube to handle over 1 million counts per sec.; slow speed decades are dekatron counter tubes for 5000 counts per sec. --Victoreen Instrument Co., Cleveland 3, Ohio.

Model M-60 mercury pulse generator is for testing amplifiers, pulse height analyzers and for other applications where fast rise times, various exponential decays and a wide range of positive or negative pulses are required. --Radiation Instrument Development Laboratory, Inc., 5737 S. Halstead St., Chicago 21, Ill.

Model 800D low background shield consists of four separate stacked sections which may be used to form various complete units for thin-window flow counting, Geiger, and scintillation counting. Within this building block construction, there is provided a minimum of three inches of iron shielding in all directions. --Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

Newly developed detection unit for this manufacturer's CE-14 carbon counter enables analysis to be made of a standard 2" diameter sample. (Major advantage in use of two inch sample is reduction in counting time.) Offered is Model CE-14L which contains the unit, and CE-14P-1L conversion kit which adapts all existing models of this manufacturer's CE-14. --Tracerlab, Inc., Waltham 54, Mass.

MANUFACTURERS NEWS:- Production of flat plate fuel elements has now been started by Martin-Nuclear division of The Martin Co. The elements will be used in performance of a zero power reactor experiment under contract with the U.S. Army's Corps of Engineers, in a study of "portable" pressurized water reactors. Martin is using new principles of fabrication in making these elements to give better stability during use and to enable simple and economical methods of reclaiming contained uranium at the end of the experiment.

A rolling mill and rotary swaging machine, recently sold by Fenn Manufacturing Co., Newington, Conn., to University of Florida, is being used by the University's college of engineering, Gainesville, in its nuclear engineering program. The rolling machine is Fenn's Model 4-053 which can roll the newer hard alloys and which has a large range of reductions in both hot and cold rolling. The swager is Fenn's Model 3F, handling tubing to 1 3/4" and solids to 5/8".

Fairchild Camera & Instrument Corp., Syosset, L.I., has recently delivered its first production order for gamma channels under its Bureau of Ships (U.S. Navy) contract. For use in nuclear power plants, the gamma radiation monitoring equipment is primarily for personnel protection. Transistors have been used in the circuitry to reduce weight and space requirements; the units operate on 0.5-amp. at 115-v. and cover a range of 1-1000 mr/hr. (Fairchild has under consideration the commercial sale of these radiation monitoring units; company executives feel there are wide commercial applications for them.)

PRODUCT NEWS:- Uranium reactor fuel enriched to more than 20% will now be made more generally available by the USAEC to those nations which have bi-lateral agreements in effect with the U.S. Up to now, the usual amount of fuel released for use abroad has been limited to six kilograms of uranium enriched up to 90% with uranium-235. Under the new policy, the Commission will consider requests for highly enriched fuel for both research and materials testing reactors when it has an economic or technical advantage over uranium containing 20% or less uranium-235. The highly enriched fuel will be available for reactors using up to eight kilograms per core loading, plus additional fuel for pipeline, burn-up, and inventory.

MANUFACTURERS' LITERATURE:- Technical report on its model CE-9 beta ray spectrometer is offered by Tracerlab, Inc., Waltham, Mass.

ATOMIC ENERGY PATENT DIGEST...new grants...

ISSUED April 29, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Method of treating animal product foodstuffs, such as meats, for preservation by high-energy ionizing radiation. B. E. Proctor, S. A. Goldblith, inventors. No. 2,832,689 assigned to Research Corp., New York, N. Y.

ISSUED April 29, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Ingot-mold assembly. A. J. Mangold, Jr., J. W. Mahaffey, S. L. Reese, inventors. No. 2,832,113 assigned to USAEC. (2) Electrolytic precipitation of uranium. R. Kunin, inventor. No. 2,832,727 assigned to USAEC. (3) Electrolytic precipitation of uranium values from carbonate leach liquors. R. Kunin, inventor. No. 2,832,728 assigned to USAEC. (4) Fuel assembly for a nuclear reactor. E. P. Wigner, inventor. No. 2,832,732 assigned to USAEC. (5) Heavy water moderated nuclear reactor. Leo Szilard, inventor. No. 2,832,733 assigned to USAEC. (6) Process for separation of heavy metals. R. B. Duffield, inventor. No. 2,832,793 assigned to USAEC.

ISSUED May 6, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Circuits to measure ionizing radiation, using Geiger Muller tubes. No. 2,833,931; J. M. Constable, inventor. No. 2,833,932; J. M. Constable, G. J. Achtellik, inventors. Both patents assigned to Electronic Products Company, Mt. Vernon, N. Y.

ISSUED May 6, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Separation of uranium from zirconium and niobium by solvent extraction. E. E. Voiland, inventor. No. 2,833,616 assigned to USAEC. (2) Fluorine process for separation of materials. G. T. Seaborg, H. S. Brown, inventors. No. 2,833,617 assigned to USAEC. (3) Separating uranium containing solids suspended in a liquid. E. C. Creutz, E. P. Wigner, inventors. No. 2,833,618 assigned to USAEC. (4) Method of preparing metallurgical grade alumina. D. H. Reeve, inventor. No. 2,833,621 assigned to USAEC. (5) Recovery of tetravalent cations from aqueous solutions. R. L. Moore, inventor. No. 2,833,799 assigned to USAEC. (6) Process for purifying uranium. D. F. Mastick, A. C. Wahl, inventors. No. 2,833,800 assigned to USAEC. (7) Method of separating isotopes of uranium in a calutron. F. A. Jenkins, inventor. No. 2,833,927 assigned to USAEC. (8) Electrical protective device. W. R. Baker, inventor. No. 2,833,965 assigned to USAEC.

MEETINGS, COURSES, CONFERENCES...

CONFERENCES:- Some 2300 abstracts of scientific papers on nuclear subjects have been submitted from 41 nations for presentation at the forthcoming Sept. 1-13 Geneva Conference, and the United Nations group in New York is now making its selection of those papers which will be presented before the Conference; others will be published. This compares with the first Conference in 1955 when 1,067 papers were submitted. Francis Perrin, high commissioner for atomic energy (France) will be president of the Conference; secretary general is Sigvard Eklund, head of the Swedish Atomic Energy Agency. (The commercial exhibition being held in Geneva with the Conference will have exhibits by the 14 nations which as of last week had booked space: Argentina, Austria, Belgium, France, Germany, Great Britain, Holland, Hungary, Italy, Liechtenstein, Sweden, Switzerland, U. S., and U.S.S.R.)

MEETINGS:- New and revised fire and explosion safety standards for nuclear reactors, now ready for tentative or final adoption, will be considered at the May 19-23 annual meeting in Chicago of National Fire Protection Association. One feature of the code is a requirement of tight, leak-proof, corrosion-resistant containers for reactor fuel, cooling and moderating media, and all other materials intimately associated with the fuels; this is to assure containment of radioactive materials if fire should build up excessive pressure or cause other abnormal conditions.

PEOPLE...in nuclear work...

Kenneth E. Fields, general manager of the U. S. Atomic Energy Commission since May 1, 1955, is resigning this July 1st.

Bruce R. Prentice has been named manager of nuclear applications in Europe for General Electric Co.'s atomic power equipment department. Mr. Prentice, formerly manager of the nuclear systems design study for the department, will work out of Switzerland.

James H. Hutton, former manager of programs for the nucleonics department of Bell Aircraft Corp., has joined Nuclear Development Corp. of America.

ATOMIC ENERGY CONTRACT NEWS...

BERYLLIUM METAL TO BE FABRICATED:- Contract to fabricate two beryllium core matrices has been awarded by Centre d'Etudes de l'Energie Nucleaire (CEN) of Belgium to Brush Beryllium Co., Cleveland. The matrices will be used in CEN's materials and engineering test reactor, designed by Nuclear Development Corp. of America, White Plains, N.Y. Nuclear Development is also acting as agent for CEN in specifying the components of the reactor from U.S. firms and is selecting the manufacturers. Under the $1,200,000 contract, Brush will produce the beryllium for the matrices by its QMV powder metallurgy process and use a number of its own techniques in the fabrication work.

PROPOSAL ACCEPTED AS BASIS FOR CONTRACT NEGOTIATION:- As a basis for contract negotiation, the USAEC has accepted a proposal of the Carolinas Virginia Nuclear Power Associates to design, develop, build and operate a nuclear power plant at Parr Shoals, some 25-miles north of Columbia, S. C. The proposal, submitted to the USAEC last August under the USAEC's power demonstration reactor program (third round), provides for a 17,000 kw heavy water cooled and moderated plant at an estimated cost of $17 million, with the government providing most of the reactor funds and the company the conventional power generating facilities. (Congressional authorization will be asked in the Commission's 1959 fiscal year authorization bill.) Architect-engineer on the job is Stone & Webster Engineering Corp., Boston; Westinghouse Electric Corp. will supply the reactor; and General Nuclear Engineering Corp., Dunedin, Fla., is acting as consultant.

CONTRACT ARRANGEMENTS MADE FOR TWO PUBLIC POWER NUCLEAR PLANTS:- Agreements have been made by the USAEC for construction of two public power plants under its power demonstration reactor program (second round). One arrangement covers separate agreements made by the Commission with Atomics International division of North American Aviation and the City of Piqua, Ohio, for a 12,500 electrical kw nuclear power plant near the city's existing power plant on the Greater Miami river. The reactor, to be built by Atomics International, will be an organic moderated and cooled facility using slightly enriched uranium. Total estimated cost to the USAEC would be $12.3 million. Piqua will provide the conventional power generating facilities at estimated cost of $4 million. Completion is planned for July, 1961.

Another arrangement covers agreements made by the Commission with Nuclear Products-Erco division of ACF Industries, Inc., and the Rural Cooperative Power Association, Elk River, Minn., for a 22,000 electrical kw closed-cycle boiling water plant using a mixture of uranium and thorium oxides. Under a cost plus fixed fee contract, ACF will supply the reactor at a ceiling price of $9,269,000 although the total cost to the Commission including operating and other costs is estimated at $11,450,000. Rural Cooperative will furnish the site and conventional generating facilities at cost of $1,750,000. Completion is scheduled for October 1960.

PACKAGE POWER PLANT CONTRACT IS LET:- Contract of U. S. Army's Corps of Engineers was awarded Peter Kiewit Sons' Co., Seattle, for construction of the first field "package" nuclear power reactor plant; location is to be at Fort Greely, near Fairbanks, Alaska. Plant had been designed by Alco Products, Inc., builder of the original package power reactor plant at Fort Belvoir, Va. The Kiewit contract, in the amount of $4,897,217, calls for completion in 1960.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Effect of Radiation on Materials. Edited by J. J. Harwood, H. H. Hausner, J. G. Morse, and W. G. Rauch. The collected papers of colloquium jointly sponsored by Office of Naval Research and The Martin Co. at Johns Hopkins University, March 1957, which dealt with changes produced by ionizing radiation in metals, ceramics, plastics, etc. 395 pages. --Reinhold Book Div., 430 Park Ave., New York 22. ($10.50)

Minerals Yearbook, 1954. Vol. 1 of this yearbook, just issued in its entirety (preprints had previously been available) covers uranium, radium, zirconium, hafnium, and additional metals and minerals other than fuels. 1149 pages. --Sup't. of Documents, Wash. 25, D.C. ($4.50)

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

May 13, 1958